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Japan's Science and Technology Budget for JFY2013

The Abe Cabinet was formed mid-December 2012, following the restoration of political power of the Liberal Democratic Party (LDP) after the Democratic Party of Japan (DPJ) had been in office just over three years. Prime Ministers normally propose a budget at the end of December for the next fiscal year (April 1-March 31) that is then discussed at the Diet session from January to March. Thus, proposing the JFY2013 budget became a most critical item on PM Abe's agenda.

Immediately after taking office, Prime Minister Abe launched what is now known as *Abenomics* (monetary, fiscal and structural reforms) in an attempt to boost the long-stagnant economy. As the first step to realize this policy, he proposed a supplemental budget to the Diet in January 2013 that was approved on February 26, 2013. Since the approval of the supplemental budget was made so close to April 1st, the beginning of the next Japanese fiscal year, most of the supplemental budget will be spent in JFY2013.

On February 28, 2013, the Abe administration drafted the JFY2013 budget by modifying the budget that had already been requested by ministries and agencies before the annual August 31, 2012 deadline. The budget is currently under discussion in the Diet; meanwhile, the provisional JFY2013 budget is in force. Only occasionally has a budget not been approved by March 31st, but the JFY2013 budget could not be approved by that date owing to the change in government. In Japan, unlike the U.S., the Diet usually makes only minor changes to the proposed budget.

The Council for Science and Technology Policy (CSTP), which coordinates all S&T budgets across the ministries and agencies, convened for the first time under the new Abe administration on March 1 with a new line-up of members. Chaired by the Prime Minister, CSTP has 14 members: 5 S&T ministers, the Secretary General, 3 industrial members, 4 from academia, and the President of the Science Council of Japan. CSTP is expected to exercise considerable control over S&T, including making more efficient use of the S&T budget and devising an S&T strategy for Japan by June 2013. It will take some time to determine what S&T strategy CSTP will propose under the new administration. The JFY2014 budget will likely reflect this new S&T policy.

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CSTP has separated out the S&T portion of the JFY2012 supplemental budget and the proposed JFY2013 budget as in Table 1.

Table 1: JFY2012 Supplemental S&T Budget and Proposed JFY2013 S&T Budget

JFY2012 S&T Budget (A) Yen Billion	JFY2012 Local Government S&T Budget (B) Yen Billion	JFY2012 Supplemental S&T Budget (C) Yen Billion	Proposed JFY2013 S&T Budget (D) Yen Billion	S&T Budget Spendable in JFY2013 (C+D) Yen Billion
3,926.0 =$39.3 Billion	464.0 =$4.6 Billion	1,019.1 =$10.2 Billion	3,575.2 =$35.7 Billion	4,594.3 =$45.9 Billion

The chronological changes of the S&T budgets for the past 12 years are provided in Table 2; the budget for JFY2012 (A+B+C in Table 1) was a record. The total S&T budget each year represents each year's original budget + S&T supplemental budget + local government S&T budget.

Table 2: Chronological Change of Japanese S&T budgets
(Original S&T budget+Supplemental S&T budget+Local government S&T budget)

(Unit: Yen Billion)($1=Yen 100)

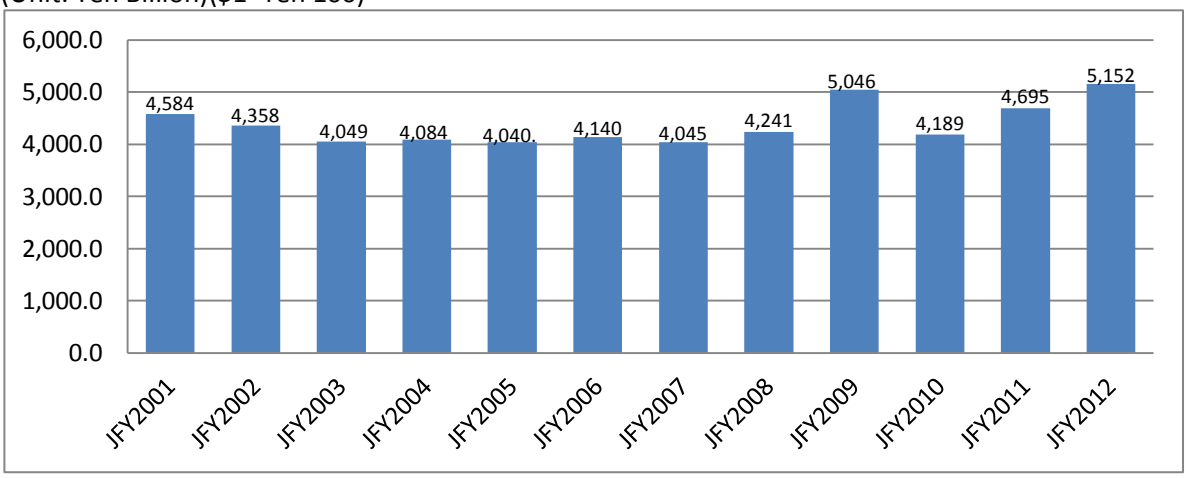

Table 3 shows that the Ministry of Education, Culture, Sports, Science and Technology (MEXT) accounts for about 65% of Japan's S&T budget in JFY2013, about four times as much as METI's 14%.

Table 3: S&T Budget Usable between January 2012-March 2013 by Ministry and Agency

Ministry or Agency	JFY2012 supplemental S&T budget (A) Yen Billion	Proposed JFY2013 S&T budget (B) Yen Billion	Total of (A) and (B) Yen Billion
Ministry of Education, Culture, Sports, S&T (MEXT)	743.1	2,317.1	3,060.2
Ministry of Economy, Trade and Industry (METI)	151.8	509.7	661.5
Ministry of Defense (MOD)	0.0	166.9	166.9
Ministry of Health, Labor, and Welfare (MHLW)	8.7	163.6	172.3
Ministry of Agriculture, Forests and Fisheries (MAFF)	21.9	93.1	115.0
Ministry of Environment (MOE)	3.4	76.8	80.2
Cabinet Secretariat	0.0	60.8	60.8
Reconstruction Agency	12.9	57.0	69.9
Ministry of Land, Infrastructure, and Transportation (MLIT)	1.5	50.6	52.1
Ministry of Internal Affairs and Communications (MIC)	64.0	49.4	113.4
Cabinet Office	4.7	14.2	18.9
Ministry of Foreign Affairs (MOFA)	0.0	5.9	5.9
Ministry of Justice (MOJ)	0.4	5.6	6.0
Police Agency	6.8	2.0	8.8
Ministry of Finance (MOF)	0.0	1.3	1.3
Diet	0.0	1.1	1.1
TOTAL	1,019.1	3,575.2	4,594.3

Examples of the major programs and projects to be implemented in JFY2013 in science-related ministries are as follows.

Table 4: Examples of Major Programs and Projects Implemented in JFY2013

Program and Project	JFY2012 supplemental budget Yen Billion	Proposed JFY2013 budget Yen Billion
Ministry of Education, Culture, Sports, Science and Technology (MEXT)		
Research on earthquake and tsunami disaster prevention and mitigation	9.6	3.4
Materials research development to strengthen the nation-wide infrastructure	8.5	1.5
Tohoku Marine-science Center	-	1.5
Next-generation energy R&D to recover Tohoku area	-	2.1
Element strategy project	1.7	2.3
Advanced low carbon technology development (ALCA)	0.9	7.3

Advanced Science Institute (comprehensive science research institute)	1.6	2.0
International Thermonuclear Experimental Reactor (ITER)	12.9	19.2
Regenerative medical care network program	12.9	9.0
“Hayabusa” and “ALOS-2” satellites development	10.3	14.6
Marine resource research	12.2	3.1
Center of Innovation (COI)	50.0	16.2
Strengthening of Basic research and personnel training	-	16.2
Grants-in-Aid for scientific research (KAKENHI)	-	231.8
Japan Science and Technology Agency (JST) basic research programs	-	53.3
World Premier International program (WPI)	10.0	9.8
Ministry of Economy, Trade and Industry (METI)		
Regenerative energy R&D Center in Fukushima	-	9.0
Innovative new structure materials development	-	4.1
Magnetic materials for highly efficient motors in next-generation vehicles	-	3.0
Ocean wind energy generating technology development	-	3.0
Ultra-low electric power-consumption-type optical electronics R&D	-	2.4
Re-generable energy storage and transportation R&D	-	1.1
Innovative usage of unused thermal energy	-	1.6
Next-generation pharmaceutical production to meet personalized medical care	-	3.7
Early detection of cancer and treatment equipment R&D	-	1.3
Ministry of Internal Affairs and Communications (MIC)		
Big Data	8.3	5.3
Next-generation communication network test bed (JGN-X)	50.0	28.7
New industry creation by efficient use of radio wave	3.7	10.4
Promotion of ICT development overseas	-	1.0
Environment for ICT development overseas and smooth information flow	-	1.2
Ministry of Health, Labor, and Welfare (MHLW)		
Support for pharmaceutical production	1.2	0.6
Drug test environment that invites industrial investment	4.6	3.5
Improvement and strengthening of review and safety on pharmaceuticals	-	1.7
Strengthening of pharmaceutical R&D in priority areas	0.7	5.4
Promotion of regenerative medical care	2.2	1.0
Promotion of personalized medical care	-	2.3
Ministry of Agriculture, Forests, and Fisheries (MAFF)		
Advanced technology development for revitalizing food production in disaster-affected areas	-	2.4
R&D on removal or mitigation of contamination at farmlands	-	0.2
R&D on industrialization of MAFF products	-	4.6
Creation of new demand, using MAFF resources	-	0.9
R&D on next-generation technologies for farm and stock farm production, using genome information	-	2.3
Revival of fisheries business	-	0.4
R&D on food safety and advancement of animal sanitation	-	0.7
Ministry of Land, Infrastructure, and Transport (MLIT)		
R&D on the countermeasures for earthquake and tsunami	-	2.0
Measures to improve deterioration of infrastructure	0.5 + some	0.1
Water disaster R&D	-	7.1
Marine frontier R&D	0.7	1.3
Countermeasures for energy and environmental problems emerging in establishing cities	0.2	0.7
R&D for activating public transportation system	-	0.3
R&D for forming recycle society	-	4.1

R&D on geospatial information	-	2.7
Ministry of Environment (MOE)		
Comprehensive R&D on environment [recovery and reconstruction fund]	-	0.8
Technology development and evaluation on contamination countermeasures	-	Unknown
R&D on the advancement of the regulations on safety from earthquakes	-	2.3
Advancement of the regulations on the safety on nuclear reactors	-	1.2
Advancement of the regulations on severe accidents and accident management	-	1.0
Comprehensive R&D on environment	-	5.4
R&D on global warming	-	4.1
Global environment observation via satellites	1.9	2.2
Nation-wide survey on children's health and environment	-	4.0

Since the 9.0-magnitude earthquake followed by tsunami and resulting nuclear accident on March 11, 2011, the unprecedented tragic events caused numerous problems requiring S&T inputs. The S&T budgets for JFY2012 and JFY2013 have therefore prioritized recovery and reconstruction. Typical programs include, for example, the Tohoku Marine Science Center program and the Next-Generation R&D program in the Tohoku area.

Other priorities are innovation technologies in alternative energy and the life sciences on which the Japanese government has focused funding for several years. These innovation technologies are sometimes woven into the reconstruction effort. For example, rescue and underwater robots have surfaced at a critical time, but robots that can work in contaminated areas are still needed to accelerate the task of shutting down the Fukushima No. 1 nuclear reactor because the buildings remain inaccessible to humans due to the radiation levels. Independent of the recovery and reconstruction, the award of the Nobel Prize for medicine and physiology to Professor Shinya Yamanaka has prompted the government to provide funding for the commercialization of iPS cell technologies.

Relevant to innovation, MEXT has invested as much as Yen 50 billion ($526 million) in the Center of Innovation (COI) program from the JFY2012 supplemental budget. MEXT has completed the selection of 15 centers of industry-university cooperation in an effort to bridge the 'valley of death' between basic research and commercialization. The above fund, from the JFY2012 supplemental budget is intended to stimulate the Japanese economy, but can only be used for establishing infrastructure, and not for R&D. In addition, independent of the fund for the 15 centers, MEXT will solicit new applications for twelve COIs in late May 2013. The NSF Tokyo Office will produce a report on the COI Program when the 12 awards are made.